

NOTES TO ARCHITECT

SECTION 10240 - ALUMINUM SECURITY SCREENS

This specification supercedes guidance noted under Tech Memo No. 55 dated June 28, 1990. Note: Galvanized expanded metal mesh screens shall no be specified.

PART 1 - GENERAL

1.01 GENERAL CONDITIONS

As specified in Section 00700.

1.02 GENERAL REQUIREMENTS

- A. Provide and install aluminum security screens complete with frames and angle clips as specified herein.
- B. Provide and install stainless steel anchors, bolts, expansion shields, and other fasteners as detailed and/or required for the complete installation of work under this section.
- C. Security screens shall be removable for maintenance work.

1.03 COORDINATION

Before commencing with the work, the Contractor shall examine the surfaces and conditions under which security screens are to be installed and shall report all discrepancies and/or defective conditions to the Engineer so that corrective measures can be taken.

Fabrication of the aluminum security screen work shall not commence until these discrepancies and/or defective conditions are corrected, or unless otherwise approved by the Engineer.

1.04 QUALITY ASSURANCE

- A. Qualifications of the Manufacturer: Use products produced by manufacturers regularly engaged in the manufacture of aluminum security screens and with a history of successful production.
- B. Qualifications of the Installer: The Installer shall be thoroughly trained in the fabrication and installation of the security screens.

1.05 SUBMITTALS

- A. Shop Drawings and Product Data:
 - 1. Six (6) complete sets of installation drawings showing the complete arrangement of screens and details in accordance with the contract drawings.

NOTES TO ARCHITECT

The shop drawings shall include reference to the sheet and detail on the contract drawings they depict.

2. Six (6) complete sets of the manufacturer's product data showing compliance with the specified requirements.

- B. Mock-up Sample: One (1) 12" x 12" mock-up sample consisting of the perimeter extruded frame, mullion, screen mesh, angle clip and fasteners.

Reference to a current sample in the Engineer's Office may be made in lieu of submittal of the sample mock-up provided such sample is exactly in accordance with the product to be furnished.

- C. Certificates: A signed certificate from the proposed manufacturer showing that the Installer has been trained in the fabrication and installation of the security screens.
- D. Fabrication of the screens shall not commence until all submittals have been approved by the Engineer.

1.06 DRAWINGS AND SPECIFICATIONS

Should the products of other manufacturer's require different drawings, details or other requirements, provide the necessary adjustments at no additional cost to the State.

Show security screen details on the drawings. If necessary, contact the local manufacturer's representative for product data and details.

1.07 PRODUCT HANDLING

- A. The Contractor shall execute the necessary precautions to properly protect the security screens and its finish against damage during assembly, transport, storage and installation.
- B. The Contractor shall execute the necessary precautions to properly protect surrounding surfaces and parts of the building(s) against damage. Any work or materials damaged as a result of the work performed under this section shall be immediately repaired or restored to its original undamaged condition or replaced with new to the satisfaction of the Engineer at no additional cost to the State.

Mfr./Rep.:
Emtek Products, Inc.:
RMA Sales Co., Inc.

Ullrich Aluminum Co.:
Diamond Welding Inc.

Details shall clearly show the building and window construction (e.g. beams, column, window frame, window sill, etc.) relative to the screen location.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. The products of the following manufacturers or approved equal are acceptable provided they meet the materials, construction and standard of quality specified herein:

1. Emtek Products, Inc.; Amplimesh No. 103 Pattern.
2. Ullrich Aluminum Company; Securamesh "007" Aluminum Grille Specification.

2.02 MATERIALS

- A. Asbestos Prohibition: No asbestos containing materials or equipment shall be used under this section. The Contractor shall ensure that all materials and equipment incorporated in the project are asbestos-free.
- B. Aluminum Security Screen Mesh: Aluminum security screen mesh shall be manufactured from 6063-T5 or 6063-T4 aluminum alloy and temper.
1. Minimum Extrusion Section Width: 0.228" (5.8 mm)
 2. Minimum Extrusion Section Height: 0.276" (7.0 mm)
 3. Maximum Opening Dimension: 2.875" (73.025 mm) perpendicular to the direction of extrusion.
- C. Aluminum Extruded Framing: Aluminum framing shall be manufactured from 6063-T5 or 6063-T4 aluminum alloy and temper of the sizes and shapes as detailed in the contract drawings or as recommended by the aluminum security screen manufacturer.
- D. Screen Frame Corner Reinforcement: Aluminum, of the type and size recommended by the aluminum security screen manufacturer.
- E. Aluminum Angle Clips: 1-1/2 inch wide x 1/8 inch thick. The length of the angle legs shall be as indicated on the contract drawings.
- F. Spacers: 5/8" diameter round anodized aluminum.

Add this screen mesh detail on the drawings:

(Refer to hard copy of the Guide Specs)

On individual building retrofit projects where there are existing aluminum security screens, if necessary, revise the mesh dimension to match the existing screen.

Head, jamb and sill conditions should be carefully checked and detailed to ensure that the angle clip legs are of sufficient length to properly secure the screen. Where angle clips are secured to concrete beams, columns and sills, locate the fastener a sufficient distance away from the edge of the concrete face to prevent spalling.

For large openings, provide aluminum channels to properly support and stiffen the screen in accordance with the manufacturer's recommendations.

NOTES TO ARCHITECT

PVC spacers shall not be used.

- G. Anchor Bolts, Screws, Nuts & Washers: Stainless steel, Type 304 alloy of the sizes and types recommended by the aluminum security screen manufacturer. Fasteners shall be tamper-resistant type where specified. Use of plastic or lead shields will not be permitted.
- H. Pop-Rivets: Pop-rivets shall be 1/8 inch diameter anodized aluminum as recommended by the aluminum security screen manufacturer.
- I. Touch-up Paint: L-4485 AN-A-KOTE, dark bronze color or equivalent coating as recommended by the aluminum security screen manufacturer.
- J. Finish:

Indicate on the details the type, diameter and length of fastener to suit the specific substrate condition.

- 1. The aluminum security screen shall be free of major scratches and other surface blemishes.
- 2. All exposed security screen mesh, frame and clip angle surfaces shall be provided with a bronze anodized finish of minimum 0.0007 inch (17.58 microns) thickness.
- 3. Cut ends, punched or drilled holes, fasteners used to connect bronze anodized parts and minor scratches shall be touch-up painted to match the bronze anodized finish.

PART 3 - EXECUTION

3.01 INSPECTION

Prior to fabrication of the security screens, the Installer shall examine the areas and conditions under which they are to be installed. The required measurements shall be accurately taken to ensure proper fit of the screens. Should any condition be found unsuitable, fabrication of the screens shall not commence until the unsatisfactory condition(s) have been corrected and are acceptable to the Installer. Proceeding with the work will imply acceptance of the conditions by the Installer.

3.02 FABRICATION AND WORKMANSHIP

- A. Fittings and Shop Assembly: Insofar as possible, fit and shop-assemble the work complete and

ready for erection and installation in accordance with the approved shop drawings and trade standards.

- B. Accuracy of the work: Fabricate and erect the work square, plumb, straight and true. All cuts shall be accurate for the minimum joint gap.
- C. Holes: Drill or punch holes required for bolted or pop-rivet connections and for the attachment of work of other trades. Burned holes are not acceptable.
- D. Cut ends and holes shall be free of burrs.
- E. The security screen mesh opening size specified under sub-section 2.02. B.3. and the orientation of the security screen mesh within the frame shall be maintained at each opening unless otherwise approved in writing by the Engineer.
- F. The security screen mesh shall be oriented within the frame so that the direction of the extrusion is in the vertical position. Also, where the screen mesh is connected to the frame and mullions, the mesh opening adjacent to the frame/mullion shall be at least one-half of the opening size noted under Subsection 2.02 B.3.
- G. The corners of the aluminum extrusion frames shall be neatly mitered and assembled using corner reinforcement. The security screen mesh shall be securely fastened to the extruded framing with pop-rivets spaced at a maximum of 6 inches on-center. Welding of the screens and frames is not acceptable.
- H. Where provided, vertical "H" section splice bars/mullions shall be located so that they are aligned with the window mullions.
- I. Concealed fasteners shall be used to secure the security screen/frame assembly to the supporting angle clips. The angle clips shall be oriented so that the leg in contact with the building is not exposed (located behind the security screen). This leg shall also have slotted holes to permit for field adjustment of the screens.

3.02 INSTALLATION AND ERECTION

- A. Installation: The aluminum security screens shall be installed and erected in their proper location/opening, plumb and true, and securely anchored to the substrate in accordance with the manufacturer's installation details, instructions and recommendations.

Fasteners securing the clip angle to the substrate and other fasteners which are exposed or accessible to vandalism shall be the tamper-resistant type. (Note: One-way non-removable fasteners are not permitted.)

- B. The security screens shall be independent of the window assemblies which they protect.

1. Security screens shall be positioned so that they do not interfere with the proper operation of the window.

2. Attachment of the security screen/frame to the existing window frames is not permitted.

- C. Replacement: Aluminum security screen sections which are damaged during fabrication, storage, transport or installation shall be immediately removed from the site and replaced with new sections matching the existing.

Delete the word "existing" where not applicable.

- D. Protection from Entrapped Water: Provide for the drainage of water entrapped within the screen framing system.

- E. Dissimilar Materials: Where aluminum surfaces come in contact with dissimilar materials, coat contact surfaces with primer and a heavy coat of bituminous paint of minimum 15 mils dry film thickness or a separator as recommended by the security screen manufacturer. Care shall be taken so that the protective coating is not visible when the assembly is completed.

3.03 CLEAN-UP

Upon completion of the installation, the security screens shall be cleaned and all dirt and debris shall be removed from the site. Care shall be taken so as not to damage surrounding areas, surfaces and parts of the building(s). The entire installation shall be left clean and in a condition acceptable to the Engineer.

NOTES TO ARCHITECT

END OF SECTION